

Contribution ID: 177 Type: Poster

Constructing Non-BPS Microstate Geometries

Microstate geometries in string theory replace the black-hole horizon with a smooth geometric "cap" at the horizon scale. Famous examples of such geometries include so-called "superstrata", which are microstates of the extremal three-charge black hole in six dimensions, and whose holographic duals are very well understood. Because of the huge simplifications provided by the BPS equations, most of the currently known microstates are supersymmetric. The current challenge is to get beyond supersymmetry and extremality.

Based on 2107.09677 and 2112.03287, I will present a new way to construct non-BPS microstate geometries, using a consistent truncation to a theory of gauged supergravity in three dimensions.

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Session Classification: Reception & Poster session